Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

number of species, and the much less alpine habitat. The species are three, so far as known: *L. microcephalum* of southern Europe, *L. lindgreeni* of Assam and Burma, and *L. apiculatum* (with varieties or subspecies *occidentale* and *luctuosum*) of western North America. In New Mexico *L. apiculatum* ascends to about 8000 ft., and in Mexico even somewhat higher. T. D. A. C.

Ichthyological Notes.— In the *Memoirs of the New South Wales Naturalists' Club,* (no. 2, 1904), Mr. Edgar R. Waite gives a most useful catalogue of the fishes of that State, with reference to the descriptions of each species. Mr. Waite has adopted a modern sequence in his classification and the names adopted by him show a praiseworthy attention to the necessary rules of nomenclature. Five hundred and twenty-six species are enumerated, most of them occurring in the harbor of Sydney.

In the *Records of the Australian Museum,* 1904, vol. 5, Mr. Waite has a useful review of the gobies with separate ventrals, known as Eleotrids, found in the waters of New South Wales. In another paper in the same *Records,* Mr. Waite discusses the breeding habits of the Fighting Fish, *Belta pugnax.*

In the *Transactions of the New Zealand Institute,* Professor W. B. Benham of Otago University describes a new species of the great pelagic Oar-fish, under the name of *Regalecus parkeri.*

In the *Meddelelser fra Kommissionen for Havundersögelser,* of Denmark (vol. 2, no. 7, 1905), Dr. Adolph Severin Jensen gives a monographic account of the ear-stones of fishes dredged in the "Polar Deep." He develops the fact, hitherto unknown, that otoliths in great quantities are deposited in the northern seas at the present time. Many of these belong to the small codfish, *Micromesistius poutassou,* a fish not properly reckoned as arctic.

In the *Bulletin of the Bureau of Fisheries for 1904* (vol. 24) Mr. Frederick A. Lucas discusses the osteology of the Tile-fish, *Lopholatilus chamæleonticeps,* a singular fish of the depths of the Atlantic. He finds the family Latilidæ, to which it belongs, well defined, and well separated from Malacanthus and from Bathymaster, which have been wrongly associated with it. In the same *Bulletin,* Mr. C. E. Silvester discusses the blood-vascular system of the Tile-fish.

In an elaborate paper in the *Proceedings of the Washington Academy of Sciences,* William F. Allen, of Stanford University, describes in great detail the circulatory system in the fishes with mailed cheeks, or Loricati. Among other things he shows that the Ophiodontidæ and the Zaniolepidæ, should be separated, as distinct families, from the Hexagrammidæ.

In the *Memoirs of the New York Academy of Science*, (vol. 2, 1905), William E. Kellicott gives an elaborate and useful account of the development of the vascular and respiratory systems of the dipneustan genus, Neoceratodus. He calls this genus by the same name as its extinct ancestor or predecessor, Ceratodus.

In the *Bulletin of the Illinois State Laboratory of Natural History*, Dr. S. A. Forbes and R. E. Richardson describe a new Shovel-nosed Sturgeon from Illinois River, under the name of *Parascaphirhynchus albus*. This species is found mixed with the ordinary Shovel-nose, *Scaphirhynchus platorhynchus* in the proportion of about one to five hundred. The new genus has the belly and breast naked, the ribs twenty or twenty-one. In Scaphirhynchus, the belly is mailed, the ribs ten or eleven only.

In the *Bulletin of the United States Bureau of Fisheries for 1904*, Mr. Chancey Juday, of the University of Colorado, records the species of fishes in Boulder Creek, twenty-five in number, one of them, *Leuciscus evermanni*, being new to science.

In the same *Bulletin* (vol. 24, 1904) Professor Kakichi Mitsukuri of the Imperial University of Tokyo, discusses the domestication or breeding of various fishes, turtles, clams, etc., in Japan. His account of the aberrant forms of the gold-fish, *Carassius auratus*, is especially interesting. About thirty monstrous forms are figured.

In the same *Bulletin* (vol. 24, 1904) Dr. D. S. Jordan and Surgeon J. C. Thompson give an account of the fishes taken by the latter while stationed at the Tortugas in Florida. Two hundred and eighteen species are enumerated, several of them not previously taken in the waters of the United States. New species are: *Holocentrus tortugæ, Eviota personata, Gnathypops aurifrons*, and *Execestides egregius*, the latter a new genus of Uranoscopidæ. A new genus, Etelides is based on the fish called *Anthias aquilionaris*. It differs from Etelis in the naked jaws, and the union of the two dorsal fins.

In a volume on *The Bahama Islands*, by Dr. George B. Shattuck (Baltimore, 1905), Mr. Barton A. Bean contributes an annotated list of the fishes known, with a number of excellent colored plates, the work of Mr. A. H Baldwin.

In the *Report of the Commissioner of Fisheries for 1904,* Professor John O. Snyder, of Stanford University, discusses the distribution of river fishes about San Francisco Bay. He shows also that *Leuciscus caurinus* of Richardson is a true Leuciscus, and a species distinct from *Mylocheilus lateralis,* hitherto supposed to be the same. *Ptychocheilus grandis* of the Sacramento is also, as Agassiz supposed, distinct from *P. oregonensis,* of the Columbia.

Mr. T. Kitahara (*Annot. Zoöl. Jap., for 1904*) of the Japanese Bureau of Fisheries corrects the nomenclature of some of the trout and salmon of Japan, as given by Jordan and Snyder in 1902. He shows that the "Ito" should stand as *Hucho perryi,* and the "Masu," as *Salmo masou.* The "Iwana," *Salvelinus pluvius,* he regards as identical with *Salvelinus malma.*

Jordan (in the same *Annotationes,* and in the *Proc. U. S. Nat. Mus.,* vol. 27) reviews Mr. Kitahara's paper, recognizing the following species of Salmonidæ in Japan:—

Oncorhynchus nerka (Walbaum); Beni-masu.
Oncorhynchus milkschitch (Walbaum); Gin-masu.
Oncorhynchus keta (Walbaum); Shake or Sake.
Oncorhynchus gorbuscha (Walbaum); Karafuto-masu.
Salmo masou (Brevoort); Masu, Ame-no-uwo, Yamabe.
Hucho perryi (Brevoort); Ito.
Salvelinus malma (Walbaum); Iwana, Ame-masu.
Salvelinus kundscha (Walbaum).
Plecoglossus altivelis (Schlegel); Ayu.

The king salmon, *Oncorhynchus tschawytscha* (Walbaum), has been since recorded from the northern part of Hokkaido, in a letter from Mr. Kitahara. Mr. Kitahara also notes the capture of *Salmo rivularis,* the California Steelhead Trout, (wrongly called *Salmo gairdneri*), off the northern part of the main island of Hondo. These two species should be added to the Japanese list.

The most elaborate faunal monograph yet published by the Bureau of Fisheries, and one of the most beautifully illustrated volumes in existence is the report of Jordan and Evermann on the fishes of Hawaii, published as part of the *Bulletin* of the United States Fish Commission for 1903, the last bulletin issued before the change of the name of the Commission to that of the Bureau of Fisheries.

In this volume are described in full four hundred and thirty-nine species of Hawaiian shore fishes, nearly all of which are admirably figured. Especially noteworthy are the seventy-three colored plates taken from life in Honolulu and Hilo. Most of these are the work of C. B. Hudson and A. H. Baldwin. Captain Hudson's paintings, made in oil, from living fishes in the aquarium, here perfectly reproduced, constitute beyond question, the finest series of fish portraits ever made by any artist. The wonderfully rich fish fauna of the Hawaiian Islands is now one of the best known in the world.

This fauna is frankly and entirely tropical and almost all the species belong to genera found in the South Seas. The species are, however, in large part different. Of the four hundred and thirty-nine species recognized, two hundred and thirty-two are confined, so far as known, to Hawaii; one hundred and forty-two are found also in Samoa and Fiji; fifty-three are common to Hawaii and Japan, and thirty-four to Hawaii and the offshores of Mexico. The singular isolation of Hawaii, which, so far as fishes are concerned, has no parallel among other tropical island groups, may be due in part to the directions of the ocean currents. These currents seem to play a large part in the transportation of species, by floating young fishes from place to place.

The collections on which this volume is based have been made by the authors, by Oliver P. Jenkins, the first to collect on a large scale in Hawaii, by Charles H. Gilbert, John O. Snyder, Walter K. Fisher, Charles C. Nutting, Michitaro Sindo, and others.

Part 2, of the same *Bulletin*, issued as a separate volume, contains an account of the fishes taken about Hawaii in the deep-sea work of the *Albatross*. This volume is by Dr. Charles H. Gilbert, who was naturalist in charge on the *Albatross* in 1902.

About eighty species were obtained in the deep seas. Nearly all of them are new, an addition to our knowledge of fishes with few parallels in the records of deep-sea dredging. Many new genera are included, and a considerable number of the offshore genera of Japan have their range extended to Hawaii. Among these are Pegasus, Aracana, Gadomus, Hoplichthys, Melanobranchus, Lophiomus, Calliurichthys, and Polymixia.

This volume is to be commended for the careful accuracy of the descriptions and for the excellence of the plates.

The Philosophical Institute of Canterbury in New Zealand publishes an index to the New Zealand Fauna by Captain F. W. Hutton. In this volume is a list of the species of fishes known — without synonyms or references, the nomenclature being apparently carefully considered.

In the *Proceedings of the Academy of Natural Sciences at Philadelphia* (1905) Henry W. Fowler publishes a number of papers on rare or little known species of fishes in the museum of the Academy. One of these treats of fishes of Borneo, with a number of new genera and species; another of Arctic fishes, from Port Barrow; another, in connection with Dr. Benjamin Sharp, on the fishes of Nantucket. Two others treat of rare or little known forms allied to the Mackerel. A new subgenus, Sierra, is proposed for *Scomberomorus cavalla*; another, Lepturacanthus, for *Trichiurus savala*. *Caranx ruber* becomes the type of Elaphrotoxon and Vexillicaranx is typified by *Caranx africanus*. Rhapiolepis is based on *Scomberoides tol*. The Pilot-fish of the Pacific, found in Hawaii and Japan is described as *Naucrates polysarcus*, the type being from the West Coast of Mexico. If the species is valid, some one of the older names, given to Pacific specimens may belong to it.

In the *Proceedings of the United States National Museum* (vol. 28), Dr. Theodore Gill has a number of short papers on new points in ichthyology. *Prionotus stearnsi*, a smooth-headed gurnard from Florida, is the type of a new genus, Colotrigla. The insertion of the pectoral fins furnishes the chief distinctive peculiarity. Simopias is a new name proposed as a substitute for Pelor, preoccupied, and Rhinopias is proposed as the generic name for the singular *Scorpæna frondosa* of Martinique. The subfamily Pelorinæ becomes Inimicinæ, for the genus Inimicus. *Neosebastes entaxis*, a Japanese fish, is properly removed from Neosebastes to become the type of Sebastosemus Gill.

In the *Report of the United States Commissioner of Fisheries*, Dr. Gill gives an interesting historic review of the ichthyology of Massachusetts. Attention is called especially to the number of waifs, young fish from the tropics, found each year, where the Gulf Stream reaches the coast of Massachusetts.

In the *Proceedings of the United States National Museum* (vol. 28, 1905), Messrs. Jordan and Seale discuss the collection of fishes brought by Professor Bashford Dean from the island of Negros in the Philippines. One hundred and eighteen species, mostly small fishes from the coral reefs, were obtained, of which eighteen are new to science. The fish fauna of the Philippines is essentially that of the East Indies, with a dash of forms from the shores of Hindostan.

In the same *Proceedings*, Dr. Peter Schmidt of St. Petersburg discusses the huge Japanese Snail-fish, *Trismegistus owstoni*, and concludes that its peculiar prickles do not justify generic separation from Liparis.

In the *Smithsonian Miscellaneous Collections* (vol. 45, 1904), *Hemibarbus joiteni,* a large chub from China, is described by Jordan and Starks.

In the *Proceedings of the United States National Museum,* (vol. 28, 1905), Dr. C. H. Gilbert and Surgeon J. C. Thompson discuss certain rare fishes collected by Dr. Thompson in Puget Sound. Two new species, both sculpins, are described: *Stelgidonotus latifrons,* and *Malacocottus kincaidi,* the first a type of a new genus. *Artedius asperulus* Starks proves to be the young of *Astrolytes fenestralis.*

In the same *Proceedings,* Messrs. Jordan and Starks discuss the fishes collected by Pierre L. Jouy on the coasts of Korea. Seventy-one species were obtained, a considerable number of which are new to science. The shore fishes are essentially those of Japan; the river fishes are nearly all new to science and of Chinese types.

In the *Annotationes Zoölogicæ Japonenses,* (vol. 5, 1905), Hans Sauter of Yokohoma describes a new fish from Japan, of the family Ateleopodidæ, under the name of *Ijimaia döfleini.* The genus Ijimaia differs from Ateleopus in the rather slight character of the shortened ventrals, and in the position of the mouth.

In the *Sitzungsbericht der Gesellschaft der naturforschender Freunde,* 1905, Mr. P. Pappenheim discusses the genera of Sturgeons, referring the Asiatic species of shovel nose, (Kessleria = Pseudoscaphirhyncus,) back to the American genus Scaphirhynchus. There is no obvious justification for this arrangement.

A. C. MacGilchrist (*Ann. Mag. Nat. Hist.,* ser. 7, vol. 15, 1905), describes a new genus, Dysalotus, (*D. alcocki*), allied to Chiasmodon, from South Africa.

Other short papers in the same *Annals* are by Mr. C. T. Regan, of the British Museum. From Tequesixtlan, Mexico, is described a new goby, *Cotylopus punctatus. Pseudoxiphophorus pauciradiatus* is held to be a valid species and a new "variety," whatever that may mean, is recorded from San Domingo de Guzman as *Pseudoxiphophorus bimaculatus* var. *tæniatus.*

Another paper deals with the genera of Asiatic catfishes, Parexostoma, Chimarrhichthys, and Exostoma. Still another describes two new fishes from the Inland Sea of Japan, unfortunately without indication of exact locality, and a new minnow from Lake Biwa.

In another paper, Mr. Regan defends his treatment of the genus Arges against strictures made by Messrs. Evermann and Kendall.

Useful revisions of certain South American genera of Cichlidæ are also given by Mr. Regan. It is not clear that any useful purpose is served by changing the spelling of Crenicara, to Crenacara. The whole tendency in nomenclature at present is to let a name stand as it is written. Purism breeds confusion.

Dr. Rudolph von Ihering in the same journal describes four mailed catfishes from Brazil, additional to those contained in the monograph of Mr. Regan.

In the *Revue Suisse*, (vol. 13, 1905), Mr. Regan describes six new species of fishes in the museum of Geneva. One of these, *Sciæna (Bairdiella) bedoti* is from Cuba.

In the *Proceedings of the Bombay Natural History Society*, Mr. Regan describes a number of new species from the Persian Gulf with a series of excellent figures.

In the *Comptes Rendus of the Sixth International Congress*, 1904, Dr. Jacques Pellegrin records a small collection of fishes from Lake Tchad, the first made in these waters. Its fauna is, however, not distinct from that of the great rivers of Central Africa. Dr. Pellegrin also describes the hatching of the eggs of the perch-like fish, *Tilapia galilæa*, in the mouth of the mother.

In the *Report of the Commissioner of Fisheries for 1904*, Ulysses O. Cox gives a revision of the cave fishes, Amblyopsidæ, of North America, with figures of most of the species. At about the same time, Dr. C. H. Eigenmann describes two new species of cave fishes, (*Biol. Bull. Ind. Univ.*, vol. 8, 1905). These are *Typhlichthys wyandotte*, from Corydon, Indiana, and *T. osborni* from Horse Cave, Kentucky.

In the *Proceedings of the Washington Academy of Science*, Dr. C. H. Eigenmann and David P. Ward give an excellent monographic review of the South American fishes constituting the family of Gymnotidæ. A few new generic names are proposed.

Dr. Robert von Lendenfeld (*Bull. Mus. Comp. Zoöl.*, 1905) describes in detail the radiating organs of deep-sea fishes, with a series of admirable plates. These organs, known as luminous organs or glands, are for the purpose of radiation of waves of light, ultra red, perhaps, or in some cases of electricity.

In the *Report on Norwegian Fishery Investigations,* Dr. Robert Collett describes the species taken in the cruise of the *Michael Sars* in the North Sea. Valuable notes accompany the list of species. A new subgenus, Bathyalopex, is proposed for *Chimæra mirabilis* and for the Japanese species, *Chimæra mitsukurii,* in which the anal is not notched.

In another paper, Collett describes a new lantern-fish, *Lampadena chavesi,* from the Azores.

In two volumes, large quarto, under the title of *A Guide to the Study of Fishes,* Henry Holt and Co. publish a general account of fish life, fish structure, and fish classification by Dr. D. S. Jordan. This work is doubtless the most elaborate yet published on this topic. It is beautifully printed and fully illustrated, and the author has tried to put into it all that he knows about fishes which can have an interest to naturalists and to the cultivated public generally. Works of similar scope but less detailed in their treatment, are Dr. Günther's *Introduction to the Study of Fishes* and the volume on fishes in the Cambridge Natural History, this last work appearing almost simultaneously with Jordan's *Guide.*

Dr. C. R. Eastman (*Mém. Soc. Géol. de France,* vol. 13, 1905) treats exhaustively of the Eocene fishes of Monte Bolca in the Museum d' Histoire Naturelle de Paris. A number of new species are described and figured. Not much account is taken of the questions of priority, else the preoccupied name, Platyrhina, would not be used for Discobatus of Garman, or Trygon for Dasyatis. Zanclus hardly belongs to or even near to the Carangidæ, and Serranus, Apogon, and Dentex are not nowadays Percidæ. But these are minor issues, in comparison with the elucidation of this earliest of fossil tropical fish faunas having a modern cast.

In the *Report* of the State Geologist of New Jersey for 1904, Dr. Charles R. Eastman contributes a popular account of the significance of fossil remains of fishes. This is followed by a description of species found in the Triassic rocks of New Jersey, with photographic plates of numerous species.

In the *American Geologist,* vol. 24, 1904, Dr. Bashford Dean shows that the Permian fish, Menaspis, may be a Chimæroid.

Mr. L. Hussakof (*Bull. Amer. Mus. Nat. Hist.,* 1905), discusses the fish called *Dinichthys intermedius,* and its probable traits in life.

An interesting and valuable biographical sketch of Peter Artedi, the "father of ichthyology," is published by Einar Lönnberg, as a memoir in behalf of the Swedish Academy of Science. "Artedi was the first to settle definitely the notion of genus in zoology and to make clear the difference existing between species and variety, to demand a classification on natural principles into classes, orders, etc., based inter alia on comparative anatomical investigation." This address marks the bicentennary of the birth of Artedi, March 10, 1705.

The seventh volume of the *Cambridge Natural History* treating of the "Fishes, Ascidians, etc.," is a most substantial and valuable contribution to our general knowledge of these groups. In this book of 753 pages, the Hemichordata, are treated by Dr. S. F. Harmer, the Ascidians and Lancelets by W. A. Herdman, the lower fishes by Dr. T. W. Bridge, and the Teleosts by Dr. G. A. Boulenger. The excellent account of the structure and physiology of fishes is by Dr. Bridge. Throughout the volume, the treatment of the subject is accurate and dignified, though distinctly technical. The fossil forms, represented by excellent plates, are placed in proper sequence with the living forms. Modern researches in the osteology of fishes have been carefully considered, and in general, more attention has been given to the rules of scientific nomenclature, than in most general treatises on ichthyology. A series of small maps showing the geographical distribution of various groups is an excellent feature of the work. By placing the Cycliæ, Ostracodermi, and Arthrodira in the appendix, Dr. Bridge is enabled to avoid any theory as to the actual relationship of each. The Cladoselachidæ are regarded as the most primitive of the known sharks, and the Crossopterygians as probable ancestors of amphibians, Dipneustans, and the bony fishes, in accordance with the carefully considered theory of Dr. Dollo.

The treatment of the Teleostei by Dr. Boulenger represents long-continued studies on the part of an original and forceful worker. In the main, the general views and the sequence adopted coincide fairly with the classification current among American ichthyologists. This is gratifying, as tradition at the British Museum leads along the old Cuvierian lines. The adoption of the theory of development does away with the sequence which would place the perch as a typical fish at the head of the series. The head of the series of bony fishes must be the most primitive of these forms, and this, all now agree, must be found in the herring-salmon group, called by Cope, Isospondyli.

From these generalized forms, we proceed to those more and more complex. In this, there is no longer much doubt as to the main facts, but there is room for great play of individual whim or taste in the relative sequence of the branches. As a book classification must be linear, the sequence can be natural in only a very slight degree at the best. Dr. Boulenger prefers a less minute subdivision of families than that adopted by Gill, Cope, and American writers generally. This matter is not a vital one. There is something to be said on either side. In a subdivision too minute the close relation of forms may be lost sight of. On the other hand, by attaching aberrant forms to the nearest family, we often destroy the naturalness of our groups. As the suborders of Teleostean fishes are very unequal in value, very much intertangled, and for the most part incapable of trenchant definition, Dr. Boulenger has been no more and no less successful than others in defining them. The fault lies with Nature, who has not done her part in the elimination of interlocking forms. The emphasis laid on the characters of the Ostariophysi is a step forward, as is also the separation of the Symbranchii from the eels. There seems to be no very good reason for using the term Malacopterygii for the group defined as Isospondyli, as the great majority of the species called Malacopterygii by Cuvier belong to the Ostariophysi and Haplomi. The Haplomi of Boulenger is not a natural group, and more extended study is necessary before we can draw the line accurately between Isospondyli and Haplomi. The suborder Heteromi of Boulenger seems to be unduly extended. The Catosteomi (Lampris and sticklebacks) form an unnatural association, as Dr. Boulenger (p. 627) seems about ready to admit. It appears, however, reasonable to place the pipe-fishes in the same suborder with the sticklebacks. The Percesoces of Boulenger can hardly hold together long. Ammodytes is a jugular fish, the Scombresoces diverge in the direction of the Haplomi, while Polynemus, Chiasmodon, Stromateus, and Anabas, all diverge widely from the mullets and other typical Percesoces, and each in its own way. As a matter of fact, the Percesoces at the best are no farther from the true Acanthopterygii than is Beryx or Gobiesox or Callionymus. Percopsis, placed by Boulenger with the Haplomi, is better separated from everything else, than the members of the Haplomi-Catosteomi-Percesoces-Acanthopterygian series are from each other. But this is the fault of Nature, not of the systematists. Aphredoderus, as Starks has shown, is not a Berycoid fish. The group Zeorhombi (the John Dory and the flounders), indicates an association not yet proved, but on the whole the allocation of families and genera among the perciform types is very satisfactory. The "new University" of Cambridge, to borrow the phrase from the preface to the work, is to be sincerely congratulated on this additional contribution to sound science and scientific method. D. S. J.

(*No. 472 was issued April 16, 1906.*)